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Robust; stems erect or at length prostrate, compressed, sparingly branched. Leaves erect, appressed, imbricated, not changed in drying, oblong-ovate, concave, subplicate, the apex abruptly piliferous, the *pilum* often recurved, the margins entire or subserrate scarcely recurved at the base; the base somewhat narrowed and rounded, the angles excavated; cells narrow and nearly straight and uniform except at the very base where they are shorter and slightly inflated (oval or roundish), but not more pellucid.—The reticulation of the subplicate leaf suggests a *Campthothecium*, the *pilum* at the apex is much as in *Eurhynchium piliferum*, while the general habit of the plant is *Rhynchosostegoid*.

THE APRIL FLORA OF CEDAR KEYS, FLA.—Entering a new country the change brings to view much that is novel, interesting and instructive to an observing mind. Leaving with the setting sun the rolling upland country and passing through the lowlands of pine and hummock, we reached at night the west coast at Cedar Keys. In the morning a varied scenery presented itself. From the center of a V-group of keys, twenty or thirty in number, extended to my right the wide expanse of the Great Gulf of Mexico, and to my left the low line of pines defining the distant shores of the mainland until lost in the misty horizon. Of these keys or islands some are small, low and frequently inundated by the tidal wave. Such yield invariably *Avicennia tomentosa*, Jacq., known as the Black Mangrove, *Borrchia frutescens*, DC., *Salicornia fruticosa*, L., var. *ambigua*, Gr., and little else save beds of a small bivalve known here as the "coon oyster." The more elevated islands, traversed by sand ridges, knolls and shell mounds, contain a flora usually rich in species; and notably prominent appear dense shrubbery and dwarfed trees of which *Quercus aquatica*, Catesb., and *Persea Catesbyana*, are extremely abundant.

The backwardness of the vegetation, the damp atmosphere and the rough sea at this season occasioned by the continued strong sea breezes, and the uninviting appearance of the village with its legitimate ratio of the colored race, would have offered no inducement to a prolonged stay. The desire, however, for mail communication from the North caused me to remain for a time, and meanwhile devote my attention to a careful study of the vegetation of the Keys and accessible shores of the mainland.

In the streets of the town and along the railroad occurred in great abundance *Sida althoifolia*, var. *aristosa*, DC., and *stipulata*, Cav., and *Abutilon Avicennae*, Gaertn., with red flowers. Also *Euphorbia heterophylla*, L., *Cassia occidentalis*, L. and *obtusifolia*, L., the last two so often seen subsequently in the side streets and alley-ways of old towns and villages. An aged citizen of Tampa informed me that many years ago these species of *Cassia* were introduced there as coffee plants but soon found their way among the other weeds in the waste grounds.

The botany of the larger Keys was interesting because of the variety of the vegetation appearing in small circumscribed areas, and frequently each Key yielding species not observed upon the others. Lacking proper boat facilities, the only means of access to these coast islands, I depended upon the bateau for the near Keys and chance opportunities to reach the distant ones. To the North Key, one of the largest, most distant and interesting I was taken through the kindness of Capt. McIlvaine who was in search of floating timber; and during his day's work around the island, left me to the study of its vegetation which engaged my time both pleasantly and profitably. Among the more interesting finds here were *Maytenus phyllanthoides*, Benth., *Sapindus marginatus*, Willd., *Prunus Caroliniana*, Ait., *Forestiera porulosa?* Poir., *Passiflora suberosa*, L., *Psychotria undata*, Jacq., *Plumbago scandens*, L., *Riccia humilis*, L., *Sarcostemma crassifolium*, Decaisne, *Rhynchospora megalocarpa*, Gray, and *Stenotaphrum Americanum*, Schrank. To the citizens each Key is known by a specific name while the word Cedar distinguishes the group. This generic term led me to form a mental picture of islands covered with Cedar, but quite contrary to my expectation, the Cedar Wood,

Juniperus Virginiana, L., var. *Bermudiana*, Vasey, is actually scarce; perhaps a score of small straggling dwarfs comprise the entire living representatives of a past pencil-wood forest. Although the location of the Faber Pencil-mills, their wood is obtained chiefly, I was informed, from the banks of the Suwanee, a river twenty miles distant.

The town of Cedar Keys is divided equally between two adjacent Keys, the one sustained by its pencil and lumber mills, the other by its stores, hotels and transit depot. On Way Key, containing the business portion of the town, occurred such plants as *Erythrina herbacea*, L., ornamental with its handsome foliage and bright scarlet flowers, but an ungainly looking shrub in its naked attire of spiny twigs; the yellow flowered *Mentzelia Floridana*, Nutt., and the white blossomed *Bidens leucantha*, Willd., together luxuriating upon the dry shell mounds; the spiny shrubs of *Bumelia parvifolia*, DC., and *Lycium Carolinianum*, Michx., with the creeping *Iresine vermicularis*, Moquin, marking the limit of the tidal wave; while *Scymeria pectinata*, Pursh., *Ipomoea sinuata*, Ost., and *Euphorbia pilulifera*, L., were scarce and limited in their range; *Eustachys petraea*, Desv., with sometimes many spikes; *Cynodon Dactylon*, Pers., forming dense mats in the loose white sand; *Melicea nutica*, Walt., appearing in the shaded nooks on the mounds; *Zamia integrifolia*, Willd., the Florida starch plant, with its red, novel cone-like aments just emerging from amidst its spreading fern-like leaves; *Carex leucomum*, Willd., var. *Floridanum*, with lenticular achenia; *Rhynchosia minima*, DC., of green and variegated foliage; *Sageretia Michauxii*, Brongn., and *Opuntia Ficus-Indicus*, Haw.

Agreeable to the desire of a New York friend I engaged with him a small sloop for a few hours pleasure ride with the privilege of landing on Snake Key, an island several miles distant and so named because of the supposed abundance of snakes on it. Upon arrival we joined in crossing, with the direction to meet the boatman on the opposite side. We had just entered and the bright yellow flowers of *Helianthus præcox*, Gray & Eng., arrested my attention when my friend, a few paces in advance, leaped, yelled, and cried simultaneously "snake bitten." At first I felt concerned but soon comprehended the situation; he had strayed among a nest of Spanish Bayonets, *Yucca aloifolia*, L., most formidable growths with which to come in contact; and they appear too so plentifully along this coast. After culling specimens of *Physalis Pennsylvanica*, L., and *Phyllanthus Niruri*, L., the latter a low perennial of straggling frutescent appearance, we again entered our boat and continued sail.

Gainsville is located upon an elevated rolling country, extending south to Bronson where it abruptly terminates in a low flat pine country, continuing to the Gulf of Mexico, interspersed here and there with dense impenetrable jungles of vegetation, defining the low fertile hummock lands. It was on these high and dry sand-ridges that the empetraceous shrub *Ceratiola ericoides*, Michx., occurred so abundantly and seemed novel in its evergreen spheroidal forms, and the beautiful *Zamia* dotted the ground of the open upland pine forests with its green tufts of Cycas leaves, and later in the season the green leaves and white flowers of the *Cubomba Caroliniana*, Gray, closely covered and hid to view the stagnant ponds around.

Near the Gulf the railroad passes for a distance of four miles through this dense vegetable growth of the Great Gulf Hummock, represented to be twenty miles long and half that width and penetrated by three large rivers conveying their waters to the Gulf. The promising appearance led me to extend my researches to these jungles. Notwithstanding a large portion of the time being consumed in reaching and returning daily from these somewhat distant grounds, I succeeded in two visits in enlarging my collection with specimens of such plants as *Chrysobalanus oblongifolius*, Mx., *Galactia Elliottii*, Nutt., *Sclerolepis verticillata*, Cavn., *Boltonia diffusa*, Ell., *Senecio lobatus*, Pers., *Vaccinium tenellum*, Ait., *Samolus ebracteatus*, Kunth., *Sabbatia gracilis*, Pursh., *Asclepius perennis*, Walt., *Ulmus alata*, Mx., *Sagittaria graminea*, Mx., *Spiranthes graminea*, Lindl., var. *Walteri*, Gray, *Calopogon multiflorus*, Lindl., *Smilax auriculata*, Walt., *Dich-*

romena leucocephala, Mx., *Rhynchospora macrostachya*, Torr., *Carex gigantea*, Rudge *Cherokeensis*, Schk., and *verrucosa*, Ell., *Paspalum undulatum*, Poir., *Panicum? molle* Mx., and *gymnocarpum*, Ell., *Crataegus apiifolia*, Mx., and *Aspidium cristatum*, Swartz, var., *Floridanum*, with others previously detected.

Other plants seen growing sparingly upon the Keys were *Canavalia obtusifolia*, DC., *Rhizophora Mangle*, L., and *Laguncularia racemosa*, Gaertn., these with a few others mentioned find here perhaps their northern limit.

The arrangements completed, the present flora about exhausted, I was quite willing to depart southward in a small schooner beyond the distant highlands of Tampa to enter upon the study of a new field of nature's richest floral displays.—DR. A. P. GARDNER.

NOTES ON THE HISTORY OF *HELIANTHUS TUBEROSUS*, THE SO-CALLED JERUSALEM ARTICHOKE; by J. Hammond Trumbull and Asa Gray, American Journal of Science and Arts, May, 1877.—We make the following extract: "Linnaeus, in the *Species Plantarum*, gave to *Helianthus tuberosus* the 'habitat in Brasilia.' In his earlier *Hortus Clif. fortianus* the habitat assigned was 'Canada.' M. Alphonse DeCandolle, in his *Géographie Botanique*, II., 824, (1855), refers to this as 'decidedly an error, at least as to Canada properly so-called,' assigns good reasons for the opinion that it did not come from Brazil, nor from Peru (to which the name under which it appeared in cultivation in the Farnese garden seemed to refer), but in all probability from Mexico or the United States. He adds that Humboldt did not meet with it in any of the Spanish colonies.

About this time I received from my friend and correspondent, the late Dr. Short, of Kentucky, some long and narrow tubers of *Helianthus doronicoides*, Lam., with the statement that he and some of his neighbors found them good food for hogs, and, if I rightly remember, had planted them for that purpose. They were planted here in the Botanic Garden; after two or three years it was found that some of the tubers produced were thicker and shorter; some of these were cooked along with Jerusalem Artichokes, and found to resemble them in flavor, although coarser. Consequently, in the second edition of my *Manual of the Botany of the Northern United States* (1856), it is stated that *H. doronicoides* is most probably the original of *H. tuberosus*. This opinion was strengthened year after year by the behavior of the tubers, and by the close similarity of the herbage and flowers of the two plants, as they grew side by side; indeed, as the two patches were allowed to run together in a waste or neglected place, they have become in a measure confounded. Wishing to obtain an unmixed stock, I applied last autumn to Prof. J. M. Coulter, of Hanover, Indiana, and received from him a good number of tubers from wild plants of the neighborhood, which will now be grown. Some of these were slender, some thicker and shorter, and a few were to all appearance identical with Jerusalem artichokes. If they were really all from one stock, as there is reason to believe, the question of the origin of *Helianthus tuberosus* is well nigh settled.

ADDITIONS TO THE FLORA OF IOWA.—Since my last report, I find the following rare plants, to be added to Arthur's Catalogue of Iowa Plants, discovered in mounting my collection:

Euphorbia obtusata, Parsh., Prof. F. L. Harvey, 1875, Des Moines river banks near Humboldt.

Habenaria obtusata, Lindl., Mrs. J. McNeil, 1875, abundant in Harrison Co., Iowa, groves.

Desmodium pauciflorum, DC., Groves, Ames, 1876.

Hypericum nudiflorum, Michx., Brink of Cedar River, five miles above Cedar Rapids, June 26, 1876.

Cymopterus glomeratus, Prof. F. L. Harvey, 1875, Humboldt, Ia. A rare plant here.

Setaria Italica, Kunth., College Farm, Ames, 1876.